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ABSTRACT

In June 1973, a survey was made among 226 institutions granting doctoral degrees regarding the first-year applications and expected enrollments for masters or higher degrees for the Fall of 1972 and the Fall of 1973. Sufficient data to analyze was received from 153, or 68 percent of those institutions. The data analysis compares types of institutions and fields of study and shows enrollment trends for each. (JMF)

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Higher Education Panel

Report

American Council on Education

Survey No. 17 March 1974

Expected Enrollment for Masters or Higher Degrees, Fall 1973

Jeffrey E. Dutton

This survey of the Higher Education Panel, initiated in June 1973, concerned the first-year applications and expected enrollments for masters or higher degrees for the fall of 1972 and the fall of 1973. The survey was limited to institutions granting doctoral degrees. Each institution was asked to indicate, for both 1972 and 1973, the number of new applications it had received through July 5 and the expected fall enrollment. This information was requested for the following fields: arts and humanities, business and commerce, education, engineering, basic medical sciences, other biological sciences, mathematical sciences, physical sciences, psychology, other basic social sciences, and "all other" fields. (See Appendix A for a copy of the survey instrument and Appendix B for field definitions.)

The survey was mailed to 226 (73 percent of the eligible population) institutions granting doctoral degrees. Usable

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This survey was conducted for the Federal government under a grant supported by the National Science Foundation, the National Institutes of Health, and the U. S. Office of Education. Joan Trexler assisted in the preparation of this report.

replies were received from 153 institutions (a return of 68 percent). Although the actual number of replies was considerably greater than 153, a number of institutions were unable to provide the new applications data in the manner requested. The final usable sample was limited to these 153 institutions able to respond completely and in accordance with survey specifications. (See Appendix C for a description of the sampling and weighting procedures.)

Discussion

Overall, expected first-year enrollment for masters or higher degrees continued to rise at a rate of 3.7 percent in fall 1973, but this trend in enrollment change differs according to type of institution and field. Public institutions reported an overall increase of 6.9 percent, whereas private institutions reported a decrease of 4.2 percent in total enrollment. The number of new applications continued to rise in fall 1973 over fall 1972 with all institutions reporting an increase of two percent in applications received. Public institutions reported a slightly greater increase in applications while private institutions reported slightly less than a two percent increase. The number of applications received declined in the arts and humanities, engineering, mathematical sciences, and physical sciences in both the public and private sectors of higher education. Enrollment for all institutions, however, declined only in the arts and humanities and mathematical sciences with all of

the decline accounted for by the private sector. Public institutions reported increases in all major fields and sub-fields, whereas private institutions reported losses in six of twelve fields.

Tables 5-7 make reference to "top twenty," "developing," and "all other" institutions. The "top twenty" are designated on the basis of National Science Foundation Fellows most frequently selecting these institutions for graduate study and on the basis of the largest amounts of Federal research and development money awarded. These twenty institutions accounted for almost one-third of all doctorates awarded in science and engineering in 1969-1970. "Developing" institutions are those which awarded science and engineering doctorates for the first time in 1960 or later. They accounted for less than five percent of all science and engineering doctorates in 1969-1970. "All other" institutions include those not classified "top twenty" or "developing," but exclude the 12 independent medical schools.

The "top twenty" institutions reported a substantial increase in applications over fall 1972. A decline in the number of applications was reported in one field only, the mathematical sciences. Expected enrollment, however, was reported to have declined in education, engineering, and "all other" fields; these declines were offset by increases in the other fields resulting in a net increase in total enrollment of 2.5 percent.

The "developing" institutions reported a lesser increase in applications (4.5 percent) with declines in five of twelve fields. Total enrollment increased by 5.1 percent, however, this overall increase was accompanied by declines in engineering, the mathematical, physical, and other basic social sciences.

Applications in the "all other" sector dropped by .2 percent with seven of the twelve fields reporting declines. Total enrollment, however, continued to increase in all fields but the arts and humanities and the mathematical sciences.

Table 1

Percentage Change Between 1972 and 1973 in Expected First-Year Enrollment for Masters or Higher Degrees:[a]

All Institutions
(N=311)

Field	New Applications Through July 5	Expected Enrollment		
		Total	Full-time	Part-time
Arts and Humanities	-2.6	-1.7	1.3	-7.3
Business and Commerce	4.3	3.2	5.9	.1
Education	0	4.8	-.2	7.6
Engineering	-4.4	3.6	5.9	.4
Life Sciences	13.4	8.6	9.6	5.4
Basic Medical Sciences	22.9	12.1	10.7	16.99
Other Biological Sciences	5.8	7.0	9.1	1.4
Mathematical Sciences	-9.7	-8.6	-1.6	-19.5
Physical Sciences	-5.5	2.8	5.3	-6.7
Basic Social Sciences	6.5	8.2	8.7	7.1
Psychology	13.1	13.0	14.4	9.2
Other Basic Social Sciences	-.6	6.2	6.1	6.2
All Other Fields	5.2	5.8	1.2	12.7
Total	2.0	3.7	3.6	3.7

[a]Based on weighted population estimates.

Table 2

Percentage Change Between 1972 and 1973 in Expected First Year Enrollment for Masters or Higher Degrees:[a]

Public Institutions
(N=165)

Field	New Applications Through July 5	Expected Enrollment		
		Total	Full-time	Part-time
Arts and Humanities	-2.6	2.4	3.2	1.0
Business and Commerce	.4	8.6	7.8	9.4
Education	6.8	4.7	-1.6	8.4
Engineering	-4.9	5.4	4.5	7.2
Life Sciences	7.7	9.9	10.6	7.7
Basic Medical Sciences	15.6	14.8	12.4	22.6
Other Biological Sciences	3.4	8.0	9.9	2.5
Mathematical Sciences	-8.2	.1	3.0	-5.6
Physical Sciences	-3.6	5.8	6.3	3.8
Basic Social Sciences	6.6	10.9	11.5	9.5
Psychology	12.0	13.6	17.0	4.1
Other Basic Social Sciences	1.1	9.8	9.2	11.5
All Other Fields	2.2	11.8	2.8	25.3
Total	2.1	6.9	4.8	9.9

[a]Based on weighted population estimates.

Table 3

Percentage Change Between 1972 and 1973 in Expected First Year Enrollment for Masters or Higher Degrees:[a]

Private Institutions
(N=146)

Field	New Applications Through July 5	Expected Enrollment		
		Total	Full-time	Part-time
Arts and Humanities	-2.6	-9.4	-2.2	-24.2
Business and Commerce	8.7	-4.8	3.1	-12.8
Education	-13.9	4.2	4.0	4.2
Engineering	-3.9	.6	9.0	-7.3
Life Sciences	24.0	1.6	4.4	-5.7
Basic Medical Sciences	30.4	1.9	5.6	-15.7
Other Biological Sciences	12.7	1.5	3.2	-1.8
Mathematical Sciences	-12.5	-27.8	-15.2	-40.3
Physical Sciences	-8.8	-6.1	2.5	-31.5
Basic Social Sciences	6.0	1.6	1.6	1.5
Psychology	15.0	11.7	8.9	18.3
Other Basic Social Sciences	-3.6	-3.8	-2.1	-8.4
All Other Fields	10.1	-8.5	-2.7	-16.7
Total	1.7	-4.2	.8	-10.9

[a]Based on weighted population estimates.

Table 4

Percentage Change Between 1972 and 1973 in Expected First Year Enrollment for Masters or Higher Degrees:[a]

Independent Medical Schools
(N=12)

Field	New Applications Through July 5	Expected Enrollment		
		Total	Full-time	Part-time
Arts and Humanities	--	--	--	--
Business and Commerce	--	--	--	--
Education	--	--	--	--
Engineering	--	--	--	--
Life Sciences	11.4	-26.1	-25.4	-28.0
Basic Medical Sciences	11.4	-26.1	-25.4	-28.0
Other Biological Sciences	--	--	--	--
Mathematical Sciences	--	--	--	--
Physical Sciences	--	--	--	--
Basic Social Sciences	80.8	5.9	5.9	--
Psychology	80.8	5.9	5.9	--
Other Basic Social Sciences	--	--	--	--
All Other Fields	-10.0	-7.4	-7.4	--
Total	17.1	-23.7	-22.2	-28.0

[a]Based on weighted population estimates.

Table 5

Percentage Change Between 1972 and 1973 in Expected First Year Enrollment for Masters or Higher Degrees:[a]

"Top Twenty" Institutions
(N=20)

Field	New Applications Through July 5	Expected Enrollment		
		Total	Full-time	Part-time
Arts and Humanities	6.8	5.5	4.9	9.7
Business and Commerce	13.4	8.9	8.5	14.6
Education	4.4	-4.6	-14.7	20.3
Engineering	1.6	-1.3	.6	-14.4
Life Sciences	17.9	3.1	2.4	6.8
Basic Medical Sciences	18.8	2.1	1.3	10.2
Other Biological Sciences	17.3	3.7	3.4	5.2
Mathematical Sciences	-2.8	1.0	.9	1.0
Physical Sciences	3.8	6.4	6.2	11.1
Basic Social Sciences	6.1	4.0	4.5	-2.1
Psychology	11.0	.2	.4	-4.5
Other Basic Social Sciences	4.4	4.8	5.3	-1.8
All Other Fields	10.3	-2.7	-3.1	1.2
Total	7.4	2.5	1.9	7.1

[a]Based on weighted population estimates.

Table 6

Percentage Change Between 1972 and 1973 in Expected First Year Enrollment for Masters or Higher Degrees:[a]

"Developing" Institutions
(N=65)

Field	New Applications Through July 5	Expected Enrollment		
		Total	Full-time	Part-time
Arts and Humanities	-11.0	.9	4.6	-3.9
Business and Commerce	9.2	6.4	14.8	-.1
Education	.8	4.1	6.0	3.8
Engineering	-1.9	-3.3	1.8	-5.6
Life Sciences	13.5	4.4	6.7	2.8
Basic Medical Sciences	17.9	26.0	18.8	70.3
Other Biological Sciences	12.2	1.4	4.5	-1.3
Mathematical Sciences	-17.4	-11.4	-3.0	-20.4
Physical Sciences	-2.3	-2.1	2.1	-12.5
Basic Social Sciences	14.7	3.6	13.6	-11.1
Psychology	27.8	13.8	43.8	-22.1
Other Basic Social Sciences	-5.2	-1.5	.5	-3.8
All Other Fields	9.5	16.5	15.8	15.6
Total	4.1	5.1	8.7	2.3

[a]Based on weighted population estimates.

Table 7

Percentage Change Between 1972 and 1973 in Expected First Year Enrollment for Masters or Higher Degrees:[a]

"All Other" Institutions
(N=214)

Field	New Applications Through July 5	Expected Enrollment		
		Total	Full-time	Part-time
Arts and Humanities	-5.5	-3.6	-.3	-9.2
Business and Commerce	-.6	1.2	2.7	-.1
Education	-.4	5.2	--	8.6
Engineering	-7.3	6.6	8.6	4.0
Life Sciences	12.3	10.9	12.3	7.1
Basic Medical Sciences	24.8	17.1	15.8	21.3
Other Biological Sciences	1.6	8.3	10.7	1.8
Mathematical Sciences	-10.9	-9.4	-2.0	-19.9
Physical Sciences	-10.5	3.1	5.8	-5.5
Basic Social Sciences	5.0	9.7	8.6	12.3
Psychology	10.6	13.7	11.1	21.2
Other Basic Social Sciences	-3.2	7.8	7.3	8.8
All Other Fields	2.3	4.2	-.6	11.8
Total	-.2	3.4	3.2	4.1

[a]Based on weighted population estimates.

Table 8

Expected First-Year Enrollment for Masters or Higher Degrees:[a]

All Institutions
(N=311)

Field	Fall, 1972				Fall, 1973			
	New Applications Through July 5	First-Year Enrollment			New Applications Through July 5	First-Year Enrollment		
	Total	Total	Full-time	Part-time	Total	Total	Full-time	Part-time
Arts and Humanities	112,390	38,503	25,133	13,370	109,509	37,849	25,452	12,397
Business and Commerce	70,433	29,381	15,387	13,994	73,444	30,320	16,306	14,014
Education	108,845	61,117	23,556	37,561	108,868	63,916	23,502	40,414
Engineering	47,473	20,329	11,810	8,519	45,360	21,058	12,509	8,549
Life Sciences	47,841	16,083	11,908	4,175	54,273	17,459	13,057	4,402
Basic Medical Sciences	21,451	4,883	3,800	1,083	26,355	5,474	4,207	1,267
Other Biological Sciences	26,390	11,200	8,108	3,092	27,918	11,985	8,850	3,135
Mathematical Sciences	23,320	9,128	5,558	3,570	21,065	8,343	5,469	2,874
Physical Sciences	33,842	10,732	8,432	2,300	31,978	11,029	8,883	2,146
Basic Social Sciences	116,811	25,348	18,247	7,101	124,375	27,435	19,828	7,607
Psychology	60,423	7,751	5,610	2,141	68,353	8,759	6,420	2,339
Other Basic Social Sciences	56,388	17,597	12,637	4,960	56,022	18,676	13,408	5,268
All Other Fields	99,671	44,219	26,449	17,770	104,820	46,794	26,770	20,024
Total	660,626	254,840	146,480	108,360	673,692	264,203	151,776	112,427

Note: Some totals do not add to the sum of parts due to rounding.

[a]Based on weighted population estimates.

Table 9

Expected First-Year Enrollment for Masters or Higher Degrees:[a]
Public Institutions
(N=165)

Field	Fall, 1972				Fall, 1973			
	New Applications Through July 5	First-Year Enrollment			New Applications Through July 5	First-Year Enrollment		
	Total	Total	Full-time	Part-time	Total	Total	Full-time	Part-time
Arts and Humanities	65,435	25,087	16,111	8,976	63,761	25,696	16,631	9,065
Business and Commerce	37,770	17,589	9,411	8,178	37,927	19,093	10,147	8,946
Education	73,116	48,003	17,854	30,149	78,092	50,257	17,569	32,688
Engineering	26,796	12,545	8,047	4,498	25,484	13,228	8,407	4,821
Life Sciences	30,909	13,511	10,030	3,481	33,277	14,845	11,097	3,748
Basic Medical Sciences	10,841	3,769	2,871	898	12,530	4,327	3,226	1,101
Other Biological Sciences	20,068	9,742	7,159	2,583	20,747	10,518	7,871	2,647
Mathematical Sciences	15,194	6,287	4,147	2,140	13,952	6,293	4,272	2,021
Physical Sciences	21,332	8,011	6,399	1,612	20,573	8,474	6,800	1,674
Basic Social Sciences	70,703	18,013	12,979	5,034	75,481	19,983	14,473	5,510
Psychology	36,631	5,204	3,825	1,379	41,015	5,912	4,476	1,436
Other Basic Social Sciences	34,072	12,809	9,154	3,655	34,466	14,071	9,997	4,074
All Other Fields	62,330	31,210	18,782	12,428	63,694	34,887	19,314	15,573
Total	403,585	180,256	103,760	76,496	412,241	192,756	108,710	84,046

Note: Some totals do not add to the sum of parts due to rounding.

[a]Based on weighted population estimates.

Table 10

Expected First-Year Enrollment for Masters or Higher Degrees:[a]

Private Institutions

(N=146)

Field	Fall, 1972				Fall, 1973			
	New Applications Through July 5	First-Year Enrollment			New Applications Through July 5	First-Year Enrollment		
	Total	Total	Full-time	Part-time	Total	Total	Full-time	Part-time
Arts and Humanities	46,955	13,416	9,022	4,394	45,748	12,153	8,821	3,332
Business and Commerce	32,663	11,792	5,976	5,816	35,518	11,228	6,159	5,069
Education	35,729	13,114	5,702	7,412	30,776	13,659	5,933	7,726
Engineering	20,677	7,783	3,763	4,020	19,876	7,830	4,102	3,728
Life Sciences	16,933	2,572	1,878	694	20,996	2,614	1,960	654
Basic Medical Sciences	10,803	1,126	929	197	14,089	1,147	981	166
Other Biological Sciences	6,130	1,446	949	497	6,907	1,467	979	488
Mathematical Sciences	8,126	2,841	1,411	1,430	7,113	2,050	1,197	853
Physical Sciences	12,510	2,721	2,033	688	11,405	2,554	2,083	471
Basic Social Sciences	46,108	7,335	5,268	2,067	48,894	7,452	5,355	2,097
Psychology	23,789	2,549	1,785	764	27,369	2,848	1,944	904
Other Basic Social Sciences	22,319	4,786	3,483	1,303	21,525	4,604	3,411	1,193
All Other Fields	37,341	13,010	7,667	5,343	41,126	11,907	7,456	4,451
Total	257,042	74,584	42,720	31,864	261,452	71,447	43,066	28,381

Note: Some totals do not add to the sum of parts due to rounding.

[a]Based on weighted population estimates.

Table 11

Expected First-Year Enrollment for Masters or Higher Degrees:[a]
Independent Medical Schools
(N=12)

Field	Fall, 1972				Fall, 1973			
	New Applications Through July 5	First-Year Enrollment			New Applications Through July 5	First-Year Enrollment		
	Total	Total	Full-time	Part-time	Total	Total	Full-time	Part-time
Arts and Humanities	--	--	--	--	--	--	--	--
Business and Commerce	--	--	--	--	--	--	--	--
Education	--	--	--	--	--	--	--	--
Engineering	--	--	--	--	--	--	--	--
Life Sciences	1,078	394	276	118	1,201	291	206	85
Basic Medical Sciences	1,078	394	276	118	1,201	291	206	85
Other Biological Sciences	--	--	--	--	--	--	--	--
Mathematical Sciences	--	--	--	--	--	--	--	--
Physical Sciences	--	--	--	--	--	--	--	--
Basic Social Sciences	182	17	17	0	329	18	18	0
Psychology	182	17	17	0	329	18	18	0
Other Basic Social Sciences	--	--	--	--	--	--	--	--
All Other Fields	200	27	27	0	180	25	25	0
Total	1,460	438	320	118	1,710	334	249	85

Note: Some totals do not add to the sum of parts due to rounding.

[a]Based on weighted population estimates.

Table 12

Expected First-Year Enrollment for Masters or Higher Degrees:[a]
"Top Twenty" Institutions
(N=20)

Field	Fall, 1972				Fall, 1973			
	New Applications Through July 5	First-Year Enrollment			New Applications Through July 5	First-Year Enrollment		
	Total	Total	Full-time	Part-time	Total	Total	Full-time	Part-time
Arts and Humanities	31,146	5,611	4,882	729	33,270	5,923	5,123	800
Business and Commerce	18,162	4,249	3,989	260	20,600	4,627	4,329	298
Education	8,020	2,676	1,904	772	8,372	2,553	1,624	929
Engineering	12,297	3,401	2,958	443	12,491	3,355	2,976	379
Life Sciences	8,044	1,679	1,428	251	9,488	1,730	1,463	267
Basic Medical Sciences	3,665	659	600	59	4,353	673	608	65
Other Biological Sciences	4,379	1,020	828	192	5,135	1,058	856	202
Mathematical Sciences	5,419	1,047	952	95	5,265	1,057	961	96
Physical Sciences	9,768	1,571	1,526	45	10,136	1,671	1,621	50
Basic Social Sciences	26,397	2,850	2,659	191	28,013	2,965	2,778	187
Psychology	6,740	465	443	22	7,483	466	445	21
Other Basic Social Sciences	19,657	2,385	2,216	169	20,530	2,499	2,333	166
All Other Fields	15,257	4,289	3,888	401	16,828	4,174	3,768	406
Total	134,510	27,373	24,186	3,187	144,463	28,055	24,643	3,412

Note: Some totals do not add to the sum of parts due to rounding.

[a]Based on weighted population estimates.

Table 13

Expected First-Year Enrollment for Masters or Higher Degrees:[a]

"Developing" Institutions
(N=65)

Field	Fall, 1972				Fall, 1973			
	New Applications Through July 5	First-Year Enrollment			New Applications Through July 5	First-Year Enrollment		
	Total	Total	Full-time	Part-time	Total	Total	Full-time	Part-time
Arts and Humanities	10,092	5,312	2,963	2,349	9,027	5,354	3,098	2,256
Business and Commerce	8,701	5,131	2,208	2,923	9,550	5,454	2,534	2,920
Education	17,447	13,185	3,510	9,675	17,499	13,763	3,720	10,043
Engineering	4,183	3,579	1,191	2,388	4,154	3,467	1,212	2,255
Life Sciences	4,660	1,911	1,238	673	5,327	2,013	1,321	692
Basic Medical Sciences	1,016	234	197	37	1,208	297	234	63
Other Biological Sciences	3,644	1,677	1,041	636	4,119	1,716	1,088	628
Mathematical Sciences	2,769	1,543	775	768	2,323	1,363	752	611
Physical Sciences	3,290	1,674	1,185	489	3,240	1,638	1,210	428
Basic Social Sciences	12,267	3,843	2,392	1,451	14,181	4,008	2,718	1,290
Psychology	7,403	1,304	724	580	9,534	1,493	1,041	452
Other Basic Social Sciences	4,864	2,539	1,668	871	4,647	2,515	1,677	838
All Other Fields	19,017	8,756	3,534	5,222	21,096	10,128	4,093	6,035
Total	82,426	44,934	18,996	25,938	86,397	47,188	20,658	26,530

Note: Some totals do not add to the sum of parts due to rounding.

[a]Based on weighted population estimates.

Table 14

Expected First-Year Enrollment for Masters or Higher Degrees:[a]
"All Other" Institutions
(N=214)

Field	Fall, 1972				Fall, 1973			
	New Applications Through July 5	First-Year Enrollment			New Applications Through July 5	First-Year Enrollment		
	Total	Total	Full-time	Part-time	Total	Total	Full-time	Part-time
Arts and Humanities	71,152	27,579	17,288	10,291	67,212	26,571	17,231	9,340
Business and Commerce	43,570	20,001	9,190	10,811	43,294	20,240	9,443	10,797
Education	83,378	45,256	18,142	27,114	82,996	47,600	18,158	29,442
Engineering	30,993	13,349	7,661	5,688	28,715	14,235	8,321	5,914
Life Sciences	34,059	12,099	8,966	3,133	38,257	13,423	10,067	3,356
Basic Medical Sciences	15,692	3,596	2,727	869	19,593	4,213	3,159	1,053
Other Biological Sciences	18,367	8,503	6,239	2,264	18,664	9,211	6,906	2,304
Mathematical Sciences	15,132	6,538	3,831	2,707	13,477	5,923	3,756	2,167
Physical Sciences	20,784	7,487	5,721	1,766	18,602	7,720	6,052	1,668
Basic Social Sciences	77,965	18,638	13,179	5,459	81,852	20,444	14,314	6,130
Psychology	46,098	5,965	4,426	1,539	51,007	6,782	4,916	1,866
Other Basic Social Sciences	31,867	12,672	8,753	3,920	30,845	13,662	9,398	4,264
All Other Fields	65,197	31,147	19,000	12,147	66,715	32,467	18,884	13,583
Total	442,230	182,094	102,978	79,116	441,120	188,623	106,226	82,397

Note: Some totals do not add to the sum of parts due to rounding.

[a]Based on weighted population estimates.

APPENDIX A

QUESTIONNAIRE

OMB No. 99-R0265 [exp.6-74]

American Council on Education

Higher Education Panel

Survey No. 17

First-Year Enrollment for Masters or Higher Degrees

Fields*	First-Year Enrollment							
	1972				1973			
	New Applications Through July 5	Actual First-Year Enrollment* (Fall)			New Applications Through July 5	Expected First-Year Enrollment* (Fall)		
	TOTAL	TOTAL	Full Time	Part Time	TOTAL	TOTAL	Full Time	Part Time
Arts and Humanities								
Business and Commerce								
Education								
Engineering								
Life Sciences								
Basic Medical Sciences								
Other Biological Sciences								
Mathematical Sciences								
Physical Sciences								
Basic Social Sciences								
Psychology								
Other Basic Social Sciences								
All Other Fields								
TOTAL								

* See definitions on reverse side.

APPENDIX B

FIELD DEFINITIONS

Definitions

First-year enrollment: Students enrolled for a master's degree or higher academic degree (e.g., Ph.D, Ed.D.) who have completed less than two semesters or three quarters of full-time graduate study or the equivalent in part-time study; a full-time student's academic work load in terms of course work or other activity (e.g., research, teaching) is at least 75 percent of that normally required. Do not include those students enrolled for a first professional degree (e.g. M.D.,D.D.S.,LL.B) unless they are enrolled for a master's degree.

Arts and Humanities: Includes architecture and environmental design, fine and applied arts, foreign language, history, letters, theology, etc.

Business and Commerce: Includes all business and commerce.

Education: Includes general teaching fields, specialized teaching fields, such as education of the mentally retarded, and non-teaching fields, such as educational administration. Do not include students who are preparing to teach academic subjects such as English, biology, etc. They should be reported in their academic speciality.

Engineering: Includes aeronautical, architectural, biomedical, ceramic, chemical, civil, electrical, engineering sciences, environmental health engineering, geological, industrial, mechanical, mining, nuclear, petroleum, and all other forms of engineering.

Basic Medical Sciences: Includes anatomy, bacteriology, biochemistry, biometrics and biostatistics, biophysics, cell biology, microbiology, molecular biology, neuroscience, pathology, pharmacology, physiology, radio biology, toxicology.

Other Biological Sciences: Includes agriculture and natural resources, biology, botany, zoology, ecology, embryology, entomology, genetics, nutrition, plant pathology, plant physiology, plant pharmacology, and others.

Mathematical Sciences: Includes mathematics, statistics, computer sciences, data processing, systems analysis.

Physical Sciences: Includes chemistry, earth sciences, physics, geology, meteorology, astronomy, metallurgy, geophysics, oceanography, and other physical sciences.

Psychology: Includes all psychology.

Other Basic Social Sciences: Includes anthropology, archeology, economics, geography, sociology, political science and government, and demography. Do not include history, social work, public administration or applied social sciences.

All Other Fields: Includes all fields other than those separately indicated in which students are enrolled for a master's or higher degree. For example, area studies, communications, health professions (exclusive of first-professional students), home economics, library science, public affairs and services, applied social sciences, etc.

APPENDIX C

SAMPLING AND WEIGHTING PROCEDURES

Appendix C
Sampling and Weighting Procedures

The eligible population for this survey consisted of 311 Ph.D.-granting institutions. Data on first-year applications and expected enrollments for masters or higher degrees were solicited by mail from a sample of 226 institutions (72.6 percent of the eligible population). Usable returns were received from 153 institutions (67.7 percent). Because of a differential response rate across the types of data requested, data were weighted separately for each type of data. Also because of the need for percentage change estimates, only institutions which completed equivalent sets of data for 1972 and 1973 were included in the estimate for that particular data item.

The population of 311 institutions was classified into the following strata:

Stratum I	Public universities
Stratum II	Private universities
Stratum III	Public four-year colleges
Stratum IV	Private four-year colleges
Stratum V	Public independent medical colleges
Stratum VI	Private independent medical colleges
Stratum VII	All seminaries

The first year application and enrollment estimates reported in the sample by responding institutions

were weighted to provide aggregate estimates of population figures. The aggregate estimator used was:

$$X'_n = \sum_{h=1}^{L} \frac{Z_h \sum_{i=1}^{m_h} X_{hi}}{\sum_{i=1}^{m_h} z_{hi}}$$

where X_{hi} is a datum (number of applications, total enrollment, full-time enrollment, part-time enrollment) reported by the i^{th} sample institution in the h^{th} stratum.

z_{hi} is a datum (number of applications, total enrollment, full-time enrollment, part-time enrollment) in the corresponding field (or field aggregate) as reported to HEGIS for the i^{th} sample institution in the h^{th} stratum.

Z_h is the total datum count in the corresponding field (or field aggregate) as reported to HEGIS for the h^{th} stratum.

L is the number of strata defining a reporting category.

The HEGIS data on first-year graduate enrollment for Fall, 1971, was used to provide a ratio adjustment factor in these estimates. Note that separate ratio adjustments were made for each field estimate.

Please note that due to rounding error the summation of estimates given for sub-fields within a major discipline may not equal the estimates given for the major discipline. Likewise percentages may not add precisely to 100.